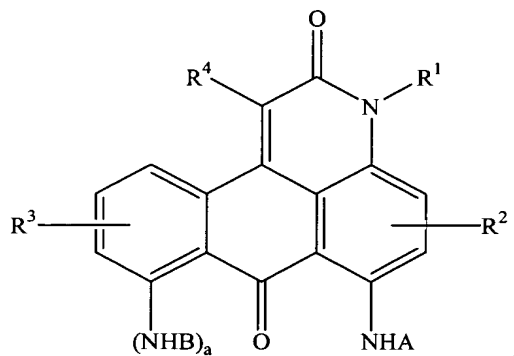


## CLAIMS:

1. An anthrapyridone of the formula,



wherein "A" and "B" are independently selected from substituted or unsubstituted cyclic ketone groups having from about 10 to about 20 ring carbon atoms; "a" is an integer having a value from 0 – 4, and R<sup>1</sup> – R<sup>4</sup> are monovalent substituents; with the proviso that when "a" is 0, R<sup>1</sup> is selected from the group consisting of a hydrogen, an alkyl group, a secondary amino group, and a sulphonyl – containing group; and R<sup>2</sup> – R<sup>4</sup> are substituents selected from the group consisting of a hydroxyl group, an aliphatic group, an aromatic group, a heterocyclic group, a halogen atom, a cyano group, an amino group, and a sulphonyl – containing group.

2. The anthrapyridone of Claim 1, wherein "A" and "B" are independently selected from the group consisting of substituted and unsubstituted anthraquinonyl, naphthaquinonyl and, benzanthranyl groups.

3. The anthrapyridone of Claim 1, wherein R<sup>4</sup> is selected from substituted or unsubstituted aryl; and R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> are independently selected from the group consisting of hydrogen, and C<sub>1</sub> – C<sub>4</sub>- alkyl.

4. The anthrapyridone of Claim 1, wherein the anthrapyridone is 3'-phenyl-2-methyl-4-(anthraquinoneamino)-1,9-anthrapyridone.

5. The anthrapyridone of Claim 1, wherein the anthrapyridone has a decomposition temperature of greater than or equal to about 350°C.

6. The anthrapyridone of Claim 1, wherein the anthrapyridone after being subjected to a weathering test for 300 hours in accordance with ASTM D4459 has a total color difference of less than about 1.0.

7. The anthrapyridone of Claim 1, wherein the anthrapyridone has a decomposition temperature of greater than or equal to about 350°C, and after being subjected to a weathering test for 300 hours in accordance with ASTM D4459 has a total color difference of less than about 1.0.

8. A resin composition comprising the anthrapyridone of Claim 1.

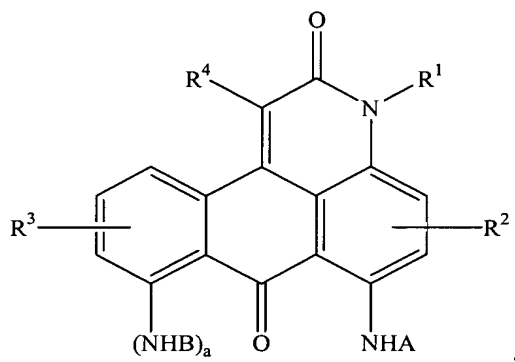
9. The resin composition of Claim 8, comprising at least one thermoplastic and/or thermoset resin.

10. The resin composition of Claim 9, wherein said thermoplastic resin is selected from the group consisting of polyesters, polyarylates, polycarbonates, polyamides, polyimides, polyamideimides, polystyrenes, rubber-modified polystyrenes, nitrile polymers, polyarylene ethers, and combinations of the foregoing thermoplastic resins.

11. An article comprising the resin composition of Claim 1.

12. A method for producing a molded thermoplastic resin composition, said method comprising:

heating a mixture comprising at least one thermoplastic resin and an anthrapyridone colorant; wherein said anthrapyridone colorant has the formula,



wherein “A” and “B” are independently selected from substituted or unsubstituted cyclic ketone groups having from about 10 to about 20 ring carbon atoms; “a” is an integer having a value from 0 – 4, and  $R^1 - R^4$  are monovalent substituents; with the proviso that when “a” is 0,  $R^1$  is selected from the group consisting of a hydrogen, an alkyl group, a secondary amino group, and a sulphonyl – containing group; and  $R^2 - R^4$  are substituents selected from the group consisting of a hydroxyl group, an aliphatic group, an aromatic group, a heterocyclic group, a halogen atom, a cyano group, an amino group, and a sulphonyl – containing group; and

extruding said mixture.

13. The method of Claim 12, wherein said heating the mixture is at a temperature of about 200°C to about 450°C.

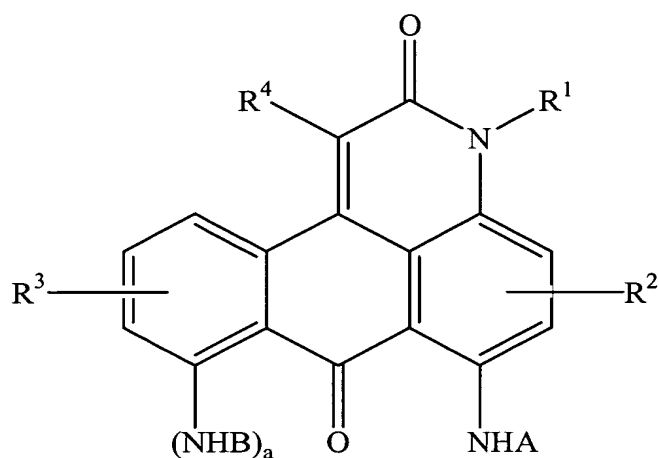
14. The method of Claim 12, wherein said at least one thermoplastic resin is selected from the group consisting of polyesters, polyarylates, polycarbonates, polyamides, polyimides, polyamideimides, polystyrenes, rubber-modified polystyrenes, nitrile polymers, and polyarylene ethers.

15. The method of Claim 14, wherein said polycarbonate comprises bisphenol A homopolycarbonate.

16. A method of preparing an anthrapyridone composition comprising:

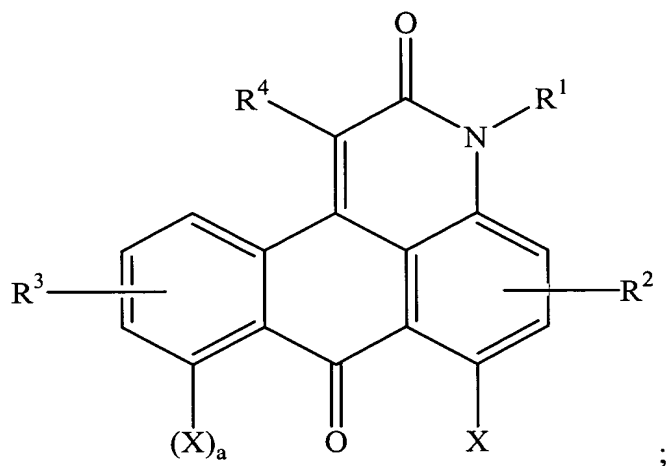
reacting a haloanthrapyridone compound with an amine compound comprising a cyclic ketone group in the presence of a catalyst composition and an acid scavenger,

wherein said anthrapyridone composition is of the formula,



wherein “A” and “B” are independently selected from substituted or unsubstituted cyclic ketone groups having from about 10 to about 20 ring carbon atoms; “a” is an integer having a value from 0 – 4, and R¹ – R⁴ are monovalent substituents; with the proviso that when “a” is 0, R¹ is selected from the group consisting of a hydrogen, an alkyl group, a secondary amino group, and a sulphonyl – containing group; and R² - R⁴ are substituents selected from the group consisting of a hydroxyl group, an aliphatic group, an aromatic group, a heterocyclic group, a halogen atom, a cyano group, an amino group, and a sulphonyl - containing group.

17. The method of Claim 16, wherein said haloanthrapyridone comprises a compound of the formula,



wherein “X” is a halogen atom, “a” is an integer having a value from 0 – 4, and R<sup>1</sup> – R<sup>4</sup> are monovalent substituents; with the proviso that when “a” is 0, R<sup>1</sup> is selected from the group consisting of a hydrogen, an alkyl group, a secondary amino group, and a sulphonyl – containing group; and R<sup>2</sup> - R<sup>4</sup> are substituents selected from the group consisting of a hydroxyl group, an aliphatic group, an aromatic group, a heterocyclic group, a halogen atom, a cyano group, an amino group, and a sulphonyl - containing group.

18. The method of Claim 16, wherein said amine compound comprises compounds of the formula A-NH<sub>2</sub> and B-NH<sub>2</sub>, wherein “A” and “B” represent a substituted or an unsubstituted cyclic ketone having from 10 to 20 ring carbon atoms.

19. The method of Claim 16, wherein said amine compound is selected from the group consisting of a substituted or an unsubstituted aminoanthraquinone, aminobenzanthrone, and an aminonaphthoquinone.

20. The method of Claim 16, wherein reacting said haloanthrapyridone compound with said amine compound is at a temperature of about 50°C to about 230°C.

21. The method of Claim 16, wherein reacting said haloanthrapyridone compound with said amine compound is for a reaction time of about 8 hours to about 48 hours.

22. The method of Claim 16, wherein said catalyst composition comprises copper metal or a copper salt.

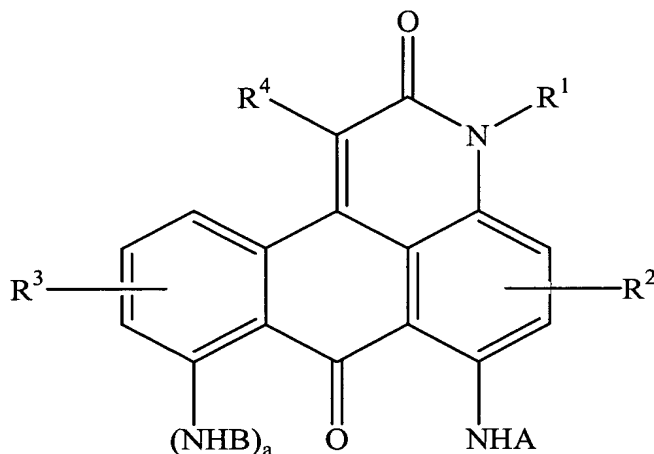
23. The method of Claim 16, wherein said catalyst composition comprises about 0.005 to about 0.2 moles per mole of said haloanthrapyridone.

24. The method of Claim 16, wherein said acid scavenger comprises alkali metal carbonates, alkaline earth metal carbonates, alkali metal bicarbonates; alkaline earth metal bicarbonates, and alkali metal carboxylates, and alkaline earth metal carboxylates having the general formula  $M(\text{COOR}^7)_n$ , wherein "M" is an alkali metal or an alkaline earth metal,  $\text{R}^7$  is a monovalent alkyl group having from about 1 to about 6 carbon atoms, and "n" has a value of 1 or 2.

25. A method of preparing an anthrapyridone composition comprising:

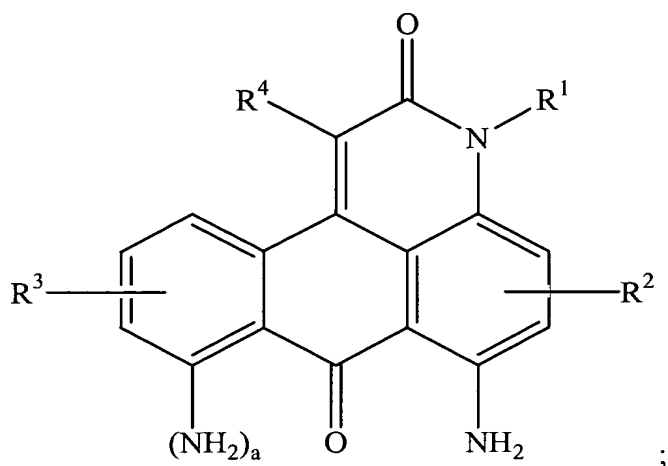
reacting an aminoanthrapyridone compound with an organohalogen compound comprising a cyclic ketone group in the presence of a catalyst composition and an acid scavenger;

wherein said anthrapyridone composition is of the formula,



wherein “A” and “B” are independently selected from substituted or unsubstituted cyclic ketone groups having from about 10 to about 20 ring carbon atoms; “a” is an integer having a value from 0 – 4, and R<sup>1</sup> – R<sup>4</sup> are monovalent substituents; with the proviso that when “a” is 0, R<sup>1</sup> is selected from the group consisting of a hydrogen, an alkyl group, a secondary amino group, and a sulphonyl – containing group; and R<sup>2</sup> - R<sup>4</sup> are substituents selected from the group consisting of a hydroxyl group, an aliphatic group, an aromatic group, a heterocyclic group, a halogen atom, a cyano group, a carbonyl - containing group, an amino group, and a sulphonyl - containing group.

26. The method of Claim 25, wherein said aminoanthrapyridone comprises compounds of the formula,



wherein “a” is an integer having a value from 0 – 4, and  $R^1 - R^4$  are monovalent substituents; with the proviso that when “a” is 0,  $R^1$  is selected from the group consisting of a hydrogen, an alkyl group, a secondary amino group, and a sulphonyl – containing group; and  $R^2 - R^4$  are substituents selected from the group consisting of a hydroxyl group, an aliphatic group, an aromatic group, a heterocyclic group, a halogen atom, a cyano group, an amino group, and a sulphonyl – containing group.

27. The method of Claim 25, wherein said organohalogen compound comprises compounds of the formula A-X or B-X, wherein “A” and “B” represent a substituted or unsubstituted cyclic ketone having from about 10 to 20 ring carbon atoms.

28. The method of Claim 25, wherein said organohalogen compound is selected from the group consisting of a substituted or unsubstituted halogenoanthraquinone, halogenobenzanthrone, and halogenonaphthoquinone

29. The method of Claim 25, wherein reacting said aminoanthrapyridone compound with said organohalogen compound is at a temperature of about 50°C to about 230°C.



30. The method of Claim 25, wherein reacting said aminoanthrapyridone compound with said organohalogen compound is at a temperature of about 50°C to about 230°C.